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DOCUMENT NO.: MSFT-2844/306723.01

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Ashish Shah, et al.

Confirmation No.: 9293

Application No.: 10/692,515

Group Art Unit: 2171

Filing Date: October 24, 2003

Examiner: Not Yet Assigned

For: SYSTEMS AND METHODS FOR PROVIDING SYNCHRONIZATION
SERVICES FOR UNITS OF INFORMATION MANAGEABLE BY A
HARDWARE/SOFTWARE INTERFACE SYSTEM

DATE OF DEPOSIT:

June 15, 2005

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Pursuant to 37 CFR § 1.56 and in accordance with 37 CFR §§ 1.97-1.98, information relating to the above-identified application is hereby disclosed. Inclusion of information in this statement is not to be construed as an admission that this information is material as that term is defined in 37 CFR § 1.56(b).



In accordance with § 1.97(b), since this Information Disclosure Statement is being filed either within three months of the filing date of the above-identified

application, within three months of the date of entry into the national stage of the above identified application as set forth in § 1.491, before the mailing date of a first Office Action on the merits of the above-identified application, or before the mailing date of a first Office Action after the filing of request for continued examination under § 1.114, no additional fee is required.

- ☐ In accordance with § 1.97(c), this Information Disclosure Statement is being filed after the period set forth in § 1.97(b) above but before the mailing date of either a Final Action under § 1.116 or a Notice of Allowance under § 1.311, or before an action that otherwise closes prosecution in the application, therefore:

☐ Certification in Accordance with § 1.97(e) is attached; or

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- ☒ Copies of reference numbers **1 thru 82** listed on the attached Form PTO-1449 are enclosed herewith.

- ☒ Copies of reference numbers **83 thru 97** on the attached Form PTO 1449 are not required to be submitted pursuant to the waiver of 37 CFR § 1.98(a)(2)(i).

☐ Copies of references - are not being submitted because they were previously cited by or submitted to the U.S. Patent and Trademark Office in patent application number , filed for

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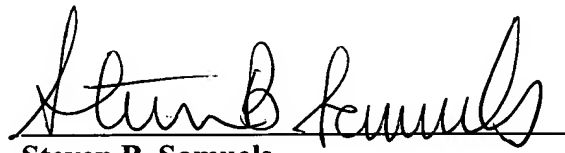
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which a claim for priority under 35 U.S.C. § 120 has been made in the
instant application.

There are no listed references which are not in the English language.

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A handwritten signature in black ink, appearing to read "Steven B. Samuels", written over a horizontal line.

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Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. MSFT-2844/306723.01	Application No. 10/692,515
		Applicant Ashish Shah, et al.	
		Filing Date October 24, 2003	Group 2171
		Confirmation No. 9293	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	1	Andrews, T. et al., "Combining Language and Database Advances in an Object-Oriented Development Environment", <i>OOPSLA Proceedings</i> , October 4-8, 1987 , 430-440	
	2	Beard, et al., "Multilevel and Graphical Views of Metadata", <i>Research and Technology Advances in Digital Libraries</i> , 1998 , 256-265,	
	3	Beitner, N.D. et al., "Multimedia Support and Authoring in Microcosm: An Extended Model", <i>Department of Electronics and Computer Science</i> , University of Southampton, 12 pages	
	4	Berg, C., How Do I Create Persistent Java Objects? <i>Dr. Dobb's Journal</i> , 1997 , 22(4), 98-101	
	5	Bhattacharya, S. et al., "Coordinating Backup/Recovery and Data Consistency Between Database and File Systems", <i>International Conference on Management of Data and Symposium on Principles of Database Systems, Proceedings of the 2002 ACM SIGMOD International Conference on Management of Data</i> , 2002 , 500-511	
	6	Biliris, A., "The Performance of Three Database Storage Structures for Managing Large Objects", <i>ACM SIGMOD</i> , 1992 , 276-285	
	7	Booch, G. Benjamin/Cummings Publishing Co, "Object-Oriented Analysis and Design with Applications", 1994 , 155, 156, 179-183	
	8	Bracchi et al., "Binary Logical Associations in Data Modelling", <i>Modelling in Data Base Management Systems G.M. Nijssen, (ed); North Holland Publishing Company</i> : 1976 , 125-147	
	9	Buneman, P. et al., Inheritance and Persistence in Database Programming Languages, <i>ACM</i> , 1986 , 4-15	
	10	Chien, A.A., "Concurrent Aggregates (CA) – Design and Experience with a Concurrent Object – Oriented Language Based on Aggregates", <i>J. Parallel and Distributed Computing</i> , 1995 , 25(2), 174-196	
EXAMINER		DATE CONSIDERED	

Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. MSFT-2844/306723.01	Application No. 10/692,515
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		Filing Date October 24, 2003	Group 2171
		Confirmation No. 9293	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	11	Chrysostomidis, Chrysosiosimos, et al. "Geometric Modeling Issues in Computer Aided Design of Marine Structures", <i>MTS Journal</i> , 22(2) pp 15-33	
	12	"Computervision Launches Design Automation Development Platform for Windows", <i>PR Newswire</i> , Financial News, Jan. 10, 1995	
	13	D'Andrea, A. et al., "Unisql's Next Generation Object-Relational Database Management System", <i>ACM SIGMOD Record</i> , September 1996 , 25(2), 70-76	
	14	Darby, C., "Object Serialization in Java 1.1. Making Objects Persistent, <i>WEB Techniques</i> , 1997, 2(9), 55, 58-59	
	15	"Developer's Guide to Apple Data Detectors-For Version 1.0.2", ©Apple Computer, Inc., 1997 , 1-34	
	16	Dietrich, Walter C., Jr., et al., "TGMS: An Object-Oriented System for Programming Geometry", <i>Software-Practice and Experience</i> , Oct 1989 , 19(10), 979-1013	
	17	Dobashi, Y. et al, "Skylight for Interior Lighting Design", <i>Computer Graphics Forum</i> , 1994 , 13(3), C85-C96	
	18	Dorsch, Jeff, "Accel Signs with IBM to Buy Altium PCB Unit-Accel Technologies Acquires the Assets to Altium's P-CAD Business Unit", <i>EDA Licensing, Electronic New</i> , Jan.16, 1995 , 4 pages	
	19	Fegaras, Leonidas, "Optimizing Object Queries Using an Effective Calculus", <i>ACM Transactions on Database Systems</i> , Dec 2000 , 25(4), 457-516	
	20	Findler, R.B. et al., Contract Soundness for Object-Oriented Languages ACM Conference on Object-Oriented Programming Systems, Languages, and Applications, <i>OOPSLA</i> , 2001, 15 pages	
	21	Foley et al., Computer Graphics: Principles and Practices, Second Edition, Addison-Wesley Publishing Company, 1990, Ch. 5 and 9, pp. 201-283	
EXAMINER		DATE CONSIDERED	

Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. MSFT-2844/306723.01	Application No. 10/692,515
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		Confirmation No. 9293	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	22	Friis, A.-Christensen, et al. "Geographic Data Modeling: Requirements and Research Issues in Geographic Data Modeling," November 2001 , <i>Proceedings of the 9th ACM International Symposium on Advances in Geographic Information Systems</i> , 2-8	
	23	Fuh, Y-C. et al, "Implementation of SQL3 Structured Types with Inheritance and Value Substitutability", <i>Digital Symposium Collection</i> , 2000 , Abstract only, 2 pages, www.acm.org/sigmod/disc/p_implementationoyostw.htm	
	24	Garret, J.H., Jr. et al, "An Object Oriented Environment for Representing Building Design and Construction Data", <i>Advanced Construction Technology Center</i> , June 1989 , Document No. 89-37-04, 1-34	
	25	Godoy Simões, M. et al, "A RISC-Microcontroller Based Photovoltaic System for Illumination Applications", <i>APEC 2000. Fifteenth Annual IEEE Applied Power Electronics Conference and Exposition</i> , February 6-10, 2000 , 2, 1151-1156	
	26	Goscinski, A. "Distributed Operating Systems The Logical Design", <i>Addison-Wesley</i> , 1991 , 306-313	
	27	Harrison, C.J. et al., "Structure Editors: User-Defined Type Values and Type Inference", <i>IEEE</i> , 2000 , 241-247	
	28	Haverlock, K., "Object Serialization, Java, and C++", <i>Dr. Dobb's Journal</i> , 1998 , 23(8), 32, 34, 36-37	
	29	Hay, David C, "Data Model Patterns: Convention of Thought", (Dorset House Publishing, New York, NY 1996 , 47-67, 235-259	
	30	Hernandez, M.A. et al, "The Merge/Purge Problem for Large Databases, International Conference on Management of Data and Symposium on Principles of Database Systems", <i>Proceedings of the 1995 ACM SIGMOD International Conference on Management of Data</i> , 1995 , 127-138	
	31	Hsiao, H.I. et al., "DLFM: A Transactional Resource Manager", <i>SIGMOD, Proceedings of the 2000 ACM SIGMOD International Conference on Management of Data</i> , 2000 , 518-528	
EXAMINER		DATE CONSIDERED	

Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. MSFT-2844/306723.01	Application No. 10/692,515
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		Confirmation No. 9293	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	32	Kaneko, K, et al, "Design of 3D CG Data Model of Move Animation Database System", <i>Advanced Database Research and Development Series, vol. 3, Proceedings of the Second Far-East Workshop On Future Database Systems, 1992, 364-372</i>	
	33	Kaneko, K. et al., Towards Dynamics Animation on Object-Oriented Animation Database System Move", <i>Advanced Database Research and Development Series, vol. 4, Database Systems for Advanced Applications 1993, 3-10</i>	
	34	Katz, R.H., "Toward a Unified Framework for Version Modeling in Engineering Databases", <i>ACM Computing Surveys, 1990, 22(4), 375-408</i>	
	35	Kawabe, S. et al, "A Framework for 3D Modeling Constraint-Based Description and Non-Manifold Geometric Modeling", <i>A Collection of Contributions based on Lectures Presented at the 2d Toyota Conference, Organization of Engineering Knowledge for Product Modelling in Computer Integrated Manufacturing, Japan, Oct. 2-5, 1988, 325-357</i>	
	36	Kempfer, L., "CAD Jumps on Windows 3.1 Bandwagon", <i>Computer Aided Engineering, 1993, 24-25</i>	
	37	Khan, L. et al, "A Performance Evaluation of Storing XML Data in Relational Database Management Systems, <i>WIDM, 2001, 31-38</i>	
	38	Khoshafian, S. et al, "Object Identify", <i>OOPSLA'86, 1986, 21, 406-416</i>	
	39	Kiesling, R., "ODBC in UNIX Environments", <i>Dr. Dobb's Journal, December 2002, 27(12), 16-22</i>	
	40	King et al, "TriStarp- An Investigation into the Implementation and Exploitation of Binary Relational Storage Structures", <i>Proc. 8.sup.th BNCOD(British National Conference On Data Bases), pp. 64-84 (York 1990).</i>	
	41	Krouse, J.K., "Geometric Models for CAD/CAM", <i>Machine Design, July 24, 1990, 99-105</i>	
	42	LeBlanc, Andrew R., et al, "Design Data Storage and Extraction Using Objects", <i>Concurrent Engineering: Research and Applications, 1993, 1, 31-38</i>	
EXAMINER		DATE CONSIDERED	

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	43	Leontiev, Y. et al, "On Type Systems for Object-Oriented Database Programming Languages", <i>ACM Computing Surveys</i> , December 2002 , 34(4), 409-449	
	44	Lim, J.B. et al, "Transaction Processing in Mobile, Heterogeneous Database Systems", <i>IEEE Trans. on Knowledge and Data Engineering</i> , 2002 ,14(6), 1330-1346	
	45	Mallet, S. et al., "Myrtle: A Set-Oriented Meta-Interpreter Driven by a Relational Trace for Deductive Databases Debugging", <i>Lecture Notes in Computer Science</i> , 1999 , 1559, 328-330	
	46	Mariani, J. A., Oggetto: "An Object Oriented Database Layered on a Triple Store", <i>The Computer Journal</i> , 1992 , 35(2),108-118	
	47	McMahon, L.E, "SED-A Non-Interactive Text Editor", Bell Laboratories, August 15, 1978 , 10 pages	
	48	"Mechanical Design Software (Buyers Guide)", <i>Computer-Aided Engineering</i> , Dec 1993 , 12(12), 32-36	
	49	Melton, J. et al, "SQL and Management of External Data", <i>SIGMOD Record</i> , March 2001 , 30(1), 70-77	
	50	Mitchell, W.J., "The Logic of Architecture", <i>Massachusetts Institute of Technology</i> , 1990 , 139-143	
	51	Navathe, S.B., "Evolution of Data Modeling for Databases," <i>Communications of the ACM</i> , September 1992 , 35(9), 112-123	
	52	Nelson, M. et al, "Generic Support for Caching and Disconnected Operation", <i>4th Workshop on Workstation Operating Systems</i> , Oct 1993 , 61-65	
EXAMINER		DATE CONSIDERED	

Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. MSFT-2844/306723.01	Application No. 10/692,515
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		Confirmation No. 9293	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	53	Nijssen, G.M. et al., "Conceptual Schema and Relational Database Design, A Fact Oriented Approach", <i>Department of Computer Science, University of Queensland, Prentice Hall</i> , 10-33, 42-43, 48-51, 156-170	
	54	Oracle 9i SQL Reference, Release 2 (9.2), March 2002 , 13-89 to 13-90	
	55	Orenstein, J, et al, "Query Processing in the Object Store Database System", <i>ACM SIGMOD International Conference on Management of Data</i> , June 1992 , 21(2),403-412	
	56	Ottogalli, F.G. et al., "Visualisation of Distributed Applications for Performance Debugging", <i>Lecture Notes in Computer Science</i> , January 2001 , 2074, 831-840	
	57	Pachet, et al, "A Combinatorial Approach to Content-Based Music Selection", <i>Multimedia Computing and Systems</i> , Jun 7, 1999 , 457-462	
	58	Papiani, M. et al, "A Distributed Scientific Data Archive Using the Web, XML and SQL/MED", <i>SIGMOD Record</i> , September 1999 , 28(3), 56-62	
	59	Powell, M., "Object, References, Identifiers, and Equality White Paper", (Jul. 2, 1993), <i>OMG TC Document 93.7.5</i> , 1-24	
	60	Prosis, J., "2-D Drafting: Why Pay More?", <i>PC Magazine: The Independent Guide to IBM-Standard Personal Computing</i> , 1993 , 12(4), 255-289	
	61	Reiner, A. et al., "Benefits of X-based Three-Tier Client/Server Model with ESRI Applications", <i>Virtual Solutions</i> , 1995 , 9 pages	
	62	Read, III, B.C., "Developing the Next Generation Cockpit Display System", <i>IEEE Aerospace and Electronics Systems Magazine</i> , 1996 , 11(10), 25-28	
EXAMINER		DATE CONSIDERED	

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	63	Rouse, N.E., "CAD Pioneers are Still Trailblazing", <i>Machine Design</i> , Oct. 22, 1987 , 59(25), 117-122	
	64	Roussopoulos, N. et al., "Using Semantic Networks for Data Base Management", <i>Proceedings of the 1st Supplemental VLDB Conference</i> , 1975 , 144-172	
	65	Santos, J.L.T. et al., "Computer Aided Mechanical Engineering Design Environment for Concurrent Design Process", <i>Proceedings of the 1993 ITEC Workshop on Concurrent Engineering</i> , May 4-6, 1993 , Simulation in Concurrent Engineering, 71-83	
	66	Seshadri, P., "Enhanced Abstract Data Types in Object-Relational Databases", <i>The VLDB Journal, The International Journal on Very Large Databases</i> , 1998 , 7, 130-140	
	67	Simon, A.R., <i>Strategic Database Technology: Management for the Year 2000</i> , 1995 , pp 6-9, 14-17, 55-57, Morgan Kaufmann Publishers	
	68	Sreenath, N., "A Hybrid Computation Environment for Multibody Simulation", <i>Mathematics and Computers in Simulation</i> , 1992 , 121-140	
	69	Singhal, A. et al., "DDB: An Object Design Data Manager for VLSI CAD", <i>Association for Computer Machinery</i> , 1993 , 467-470	
	70	Stevens, T., "Value in 3-D", <i>Industry Week</i> , January 8, 1995 , 45-46	
	71	Stonebraker, M., "The Case for Partial Indexes", <i>SIGMOD Record</i> , 1989 , 18(4), 4-9	
	72	Strickland, T.M., "Intersection of Relational and Object", <i>Proceedings of the AM/FM International Conference XVII</i> , March 14-17, 1994 , 69-75	
EXAMINER		DATE CONSIDERED	

Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. MSFT-2844/306723.01	Application No. 10/692,515
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	73	Sutherland, J. et al., "The Hybrid Object-Relational Architecture (HORA), An Integration of Object-Oriented and Relational Technology", <i>Applied Computing: States of the Art and Practice</i> , 1993 , 326-333	
	74	Suzuki, H. et al., "Geometric Modeling for Modeling Products", <i>Proceedings of the Third international Conference on Engineering Graphics and Descriptive Geometry</i> , July 11-16, 1988 , Vienna Austria, 2, 237-243	
	75	Sreekanth, U. et al., "A Specification Environment for Configuring a Discrete-Part Manufacturing System Simulation Infrastructure", <i>International Conference on Systems, Man and Cybernetics</i> , October 17-20, 1993 , 1, 349-354	
	76	Taylor, R.H. et al., "An Integrated Robot System Architecture", <i>Proceedings of the IEEE</i> , July 1983 , 71(7), 842-856	
	77	Varlamis I. et al., "Bridging XML-Schema and Relational Databases. A System for generating and Manipulating Relational Databases using Valid XML Documents", <i>DocEng' 01</i> , November 9-10, 2001	
	78	Wilcox, J., "Object Databases-Object Methods in Distributed Computing", <i>Dr. Dobbs Journal</i> , November 1994 , 19(13), 26-34	
	79	Watanabe, S., "Knowledge Integration for Architectural Design", <i>Knowledge-Based Computer-Aided Architectural Design</i> , 1994 , 123-146	
	80	Waugh, A., "Specifying Metadata Standards for Metadata Tool Configuration", <i>Computer Networks and ISDN Systems</i> , 1998 , 30, 23-32	
	81	Wold, E. et al., "Content-Based Classification, Search, and Retrieval of Audio", <i>IEEE Multimedia</i> , <i>IEEE Computer Society</i> , 1996 , 3, 27-36	
	82	Yoshikawa, M. et al., "XRel: A Path-Based Approach to Storage and Retrieval of XML Documents Using Relational Databases", <i>ACM Transactional on Internet technology</i> , August 2001 , 1(1), 110-141	
EXAMINER		DATE CONSIDERED	

Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office	Docket No. MSFT-2844/306723.01	Application No. 10/692,515
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U. S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Name	Class	Subclass
	83	2002/0091702 A1	07/11/02	Mullins	707	100
	84	2002/0198891 A1	12/26/02	Li, et al.	707	102
	85	5,893,106	04/06/99	Brobst, et al.	707	102
	86	5,900,870	05/04/99	Malone, et al.	345	333
	87	6,047,291	04/04/00	Anderson, et al.	707	103
	88	6,108,004	08/22/00	Medl	345	346
	89	6,112,024	08/29/00	Almond, et al.	395	703
	90	6,199,195 B1	03/06/01	Goodwin, et al.	717	1
	91	6,338,056 B1	01/08/02	Dessloch, et al.	707	2
	92	6,370,541 B1	04/09/02	Chou, et al.	707	103
	93	6,519,597 B1	02/11/03	Cheng, et al.	707	10
	94	6,556,983 B1	04/29/03	Altschuler, et al.	706	55
	95	6,578,046 B2	06/10/03	Chang, et al.	707	103
	96	6,772,178 B2	08/03/04	Mandel, et al.	707	204
	97	2002/0152422 A1	10/17/02	Sharma, et al.	714	13

FOREIGN PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Country	Translation	
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